U.S. Department of the Interior • U.S. Geological Survey

MINERAL INDUSTRY SURVEYS

Mark Schaefer, Interim Director

Reston, VA 20192

For information, contact:

Jozef Plachy, Commodity Specialist

Telephone: (703) 648-4982, Fax: (703) 648-7757

E-mail: jplachy@usgs.gov

Stephen M. Jasinski (Data), (703) 648-7955

MINES FaxBack: (703) 648-4999 Internet: http://minerals.er.usgs.gov/minerals

ZINC IN AUGUST 1997

Domestic mine production in August, expressed in zinc content of concentrate, increased by nearly 9% over the previous month's production, and by more than 3% over that of August 1996. Smelter production declined by 3% over that of July but was about 15% higher than in August 1996. Apparent consumption declined by 12% from the previous month's consumption but was nearly 12% higher than a year ago.

The *Platt's Metals Week* composite price for North American Special High Grade zinc continued its upward trend; after the chaotic closing days of July, the composite price for August increased by 8% over the previous month's price and 54% over that of August 1996.

During the closing days of July, the zinc metal market went through extreme price fluctuations. After soaring to a new 7-year peak of \$1,675 per metric ton on July 28, the London Metal Exchange 3-month price collapsed by 20% to a low of \$1,375 the following day. On July 30, it reached a high of \$1,520. By the beginning of August, it settled at \$1,541, and the average for the whole month was \$1,653 per ton of zinc metal. The steady price increase is the reflection of a positive supply/demand trend. Last year, world refined production reached 7.31 million tons while consumption increased to 7.44 million tons. In the first half of 1997, the worldwide demand for zinc metal increased by 3.9% over that of the same period of 1996 and is expected to strengthen further in the second half. Zinc production, although increasing, is not rising at a rate sufficient to match the increase in consumption.

As the price of zinc metal is steadily moving up, processing of domestic scrap is becoming more attractive. The Japanese Government has adopted new guidelines for end-of-life vehicles (ELVS) that would make Japanese cars easier to dismantle and recycle. Currently, the recycling rate by vehicle weight is about 75%; the remaining 25% is dumped in local landfills. According to the new guideline, the recycling rate of ELVS is to be raised to 85% by 2002 and 95% by 2015. Included in the recommendations is a commitment to reduce the volume of

ELVS discarded in landfills to three-fifths of the 1996 level in 2002 and one-fifth by 2005 (Metal Bulletin, 1997e).

Cominco Ltd. expects the 1997 production at its Trail smelter to reach about 290,000 tons of refined metal, up from 272,000 tons in 1996. Cominco has also included buying metal from London Metal Exchange warehouses as a standard practice to meet its sales requirements. In the past 2 years, Cominco bought a total of over 70,000 tons of Special High Grade zinc from the LME. For 1997, the purchases are expected to reach 50,000 tons (Metal Bulletin, 1997d).

Western Metals Ltd. of Australia approved development of the Pillara (formerly Blendevale) underground mine in the Lennard Shelf area of Western Australia. In spite of being situated only about 50 kilometers northeast of the company's existing Cadjebut operations, the new mine will have its own processing plant treating 1.5 million tons of ore per year. The Pillara mill is to produce about 200,000 tons of concentrate containing 102,000 tons of zinc and 28,000 tons of lead. Reserves amount to 10.6 million tons grading 8.1% zinc and 2.5% lead. Concentrates will be trucked to a new port facility at Derby. The new storage facility will have a capacity of 400,000 tons of concentrate, large enough to also accommodate concentrates from Cadjebut, which are currently sent to the port of Wyndham. When Cadjebut is depleted, approximately by the end of 1997, its processing plant will beneficiate ore from the newly opened Goongewa Mine and the future Kapok Mine (Mining Journal, 1997b).

Cominco Ltd. of Canada has agreed to extend a US\$11 million loan to Anvil Range Mining Corp. for reopening of the Faro Mine in the Yukon Territory. Two-thirds of the committed amount has already been made available for stripping of overburden over the Grum ore deposit, an operation which is expected to last for about 3 months. The mine has long been considered a swing operation, unable to withstand a downturn in metal prices. The Faro Mine closed in December 1996 because of low zinc prices, but it was decided to reopen when

zinc prices took an upward turn. Still, the company is looking for ways to improve efficiency and is negotiating with the Yukon Government to reduce energy costs (Metal Bulletin, 1997a).

Cominco is also inviting tenders for reopening of the Sa Dena Hes Mine in southeast Yukon Territory. The mine was in operation from August 1991 through November 1992 when it was put on care-and-maintenance status owing to low zinc prices. The property was bought in December 1993 by a joint venture of Cominco (25%), Teck Corp. (25%), and Korea Zinc Co. Ltd. (50%). At the time of purchase, minable reserves were estimated at 1.75 million tons with an average grade of 12.1% zinc, 3.4% lead, and 52 grams of silver per ton (Metal Bulletin, 1997b).

According to the Energy & Mines Ministry, Peru's zinc mine production rose by 19.7% to a total of 428,687 tons through the first half of 1997. The largest producers were the state-owned Empresa Minera del Centro del Perú S.A. (Centromin), Empresa Minera Iscaycruz S.A., Cía. Minera San Ignacio de Morococha, and Cía. Minera Milpo (Platt's Metals Week, 1997).

The Doe Run Company, a subsidiary of the Renco Group Inc., reportedly confirmed its intention to acquire a 100% interest in La Oroya metallurgical complex in Peru after Grupo Industrias Peñoles of Mexico withdrew its winning bid. Although the St Louis-based company has said it will respect the workers' priority right to purchase up to 10% of the shares, this option has seldom been exercised. Metal Oroya, as the complex will be renamed under its new owners, has an annual capacity of 91,000 tons of lead, 70,000 tons of zinc, 66,500 tons of copper, 809 tons of silver, and 2.3 tons of gold. Doe Run hopes to sign the contract by the end of September. Instead of building a new refinery, which would take 3 to 4 years to complete, Doe Run is buying an ongoing concern with a guaranteed cashflow and a steady workforce. The downside is

that the aging refinery needs a major environmental cleanup. However, Centromin was granted approval of a 10-year environmental program by Peru's Energy & Mining Ministry. The program will continue to be financed by the Peruvian Government once the sale is completed (Metal Bulletin, 1997c).

The Indian Steel and Mine Ministry has announced the approval of a new zinc smelter for the state-owned Hindustan Zinc Ltd. (HZL). The smelter will have a capacity of 60,000-100,000 tons of metal per year and will cost about \$160 million. Work should start during fiscal year 1998 (ending in March 1999) and should be completed by 2002. HZL also plans to increase the capacity at two existing smelters by 10,000 tons each. The current capacity of HZL's three smelters is 149,000 tons per year. The smelter initiative follows plans to expand the output of the Rampura Agucha Mine, in central Rajsthan, from 900,000 tons to 1.3 million tons of ore per year. Resources amount to 60 million tons, grading 13.5% zinc and 2% lead (Mining Journal, 1997a).

References Cited

Metal Bulletin, 1997a, Anvil Range secures C\$15m loan from Cominco: Metal Bulletin, no. 8203, August 14, p. 6.

———1997b, Cominco may reopen Sa Dena Hes: Metal Bulletin, no. 8204, August 18, p. 4.

———1997c, Doe Run to acquire 100% of La Oroya: Metal Bulletin, no. 8202, August 11, p. 6.

———1997d, Hotline, Trail problems: Metal Bulletin, no. 8201, August 4, p. 14.

———1997e, Recycling guidelines challenge Japan's scrap industry: Metal Bulletin, no. 8205, August 21, p. 9.

Mining Journal, 1997a, Boost for Indian zinc: Mining Journal, v. 329, no. 8444, August 29, p. 1.

———1997b, Pillara zinc to go ahead: Mining Journal, v. 329, no. 8440, August 1, p. 1.

Platt's Metals Week, 1997, Peru zinc mine output up 19.7%: Platt's Metals Week, v. 68, no. 33, August 18, p. 7.

TABLE 1 SALIENT ZINC STATISTICS 1/

(Metric tons)

		1996		1997			
	August	JanAug.	JanDec.	June	July	August	JanAug.
Production:							
Mine, zinc content of concentrate	50,400	418,000	628,000	47,500 r/	48,100 r/	52,200	399,000
Mine, recoverable zinc	48,100 r/	399,000	600,000	45,300 r/	45,900 r/	49,800	380,000
Smelter, refined zinc	27,400	240,000	366,000	31,600	32,500	31,500	254,000
Oxide (gross weight)	12,300 r/	103,000 r/	156,000	14,500	14,500	14,400	110,000
Consumption:							
Refined zinc, reported	54,200 r/	443,000 r/	788,000	46,100	44,500	43,800	369,000
Ores e/ (zinc content)	150 r/	1,200 r/	1,800	150	150	150	1,200
Zinc-base scrap e/ (zinc content)	8,300 r/	66,400 r/	100,000	8,300	8,300	8,300	66,400
Copper-base scrap e/ (zinc content)	14,000 r/	112,000 r/	170,000	14,000	14,000	14,000	112,000
Aluminum- and magnesium-base scrap e/							
(zinc content)	67 r/	536 r/	800	67	67	67	536
Total e/	76,700 r/	623,000 r/	1,060,000	68,600	67,000	66,300	549,000
Apparent consumption, metal 2/	93,000 r/	761,000 r/	1,210,000	106,000	119,000 r/	105,000	895,000
Stocks of refined (slab) zinc, end of period:							
Producer 3/	9,380 r/	XX	XX	10,500	11,100	12,600	XX
Consumer 4/	62,600 r/	XX	XX	56,100	53,800 r/	55,200	XX
Merchant	1,350	XX	XX	5,220	5,710	6,250	XX
Total	73,400 r/	XX	XX	71,900	70,600 r/	74,100	XX
Shipments of zinc metal from Government							
stockpile	1,460 r/	7,230	16,500	1,850	51	665	36,000
Imports for consumption:	1,100 1/	7,230	10,500	1,050	51	005	30,000
Refined (slab) zinc	63,000	510,000	827,000	72,400	85,400	NA	533,000 5
Oxide (gross weight)	4,470	38,300	56,300	4,580	4,980	NA	36,800 5
Ore and concentrate (zinc content)	4,890	6,390	15,100			NA	18,100 5
Exports:							
Refined (slab) zinc	246	1,330	1,970	247	178	NA	1,650 5
Oxide (gross weight)	499	4,140	5,770	488	635	NA	3,200 5
Ore and concentrate (zinc content)	96,600	223,000	425,000	37,800	152,000	NA	233,000 5
Waste and scrap (gross weight)	2,880	32,500	45,500	4,890	4,080	NA	30,800 5
Price:							
London Metal Exchange, average,							
per metric ton	\$1,007.24	\$1,025.12	\$1,025.03	\$1,354.18	\$1,517.96	\$1,653.51	\$1,324.66
Platt's Metals Week North American		,	, -	*	,	•	. ,
Special High Grade, average, ¢ per pound	51.26	50.54	51.11	66.12	73.25	79.15	65.32

e/ Estimated. r/ Revised. NA Not available. XX Not applicable.

^{1/} Data are rounded to three significant digits, except prices; may not add to totals shown.

^{2/} Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

^{3/} Data from U.S. Geological Survey and American Bureau of Metal Statistics.

^{4/} Includes an estimate for companies that report annually.

^{5/} Includes data through July only.

${\bf TABLE~2}$ REFINED ZINC PRODUCED IN THE UNITED STATES 1/

(Metric tons)

	Beginning			Ending
Month	stocks 2/	Production	Shipments	stocks 2/
1996:				
JanAug	XX	240,000	240,000	XX
August	8,650	27,400	27,500	8,570
September	8,570	30,800	29,900	9,480
October	9,480	32,300	31,600	10,100
November	10,100	32,000	30,300	11,800
December	11,800	31,200	32,300	10,800
Total	XX	366,000	363,000	XX
1997:				
January	10,800	32,700	32,200	11,300
February	11,300	29,300	29,800	10,800
March	10,800	31,300	30,400	11,600
April	11,600	31,900	31,400	12,100
May	12,100	33,300	33,300	12,100
June	12,100	31,600	33,200	10,500
July	10,500	32,500	31,900	11,100
August	11,100	31,500	30,000	12,600
JanAug	XX	254,000	252,000	XX

XX Not applicable.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

 $\begin{tabular}{ll} TABLE~3\\ ZINC~OXIDE~PRODUCED~1/~IN~THE~UNITED~STATES~2/\\ \end{tabular}$

(Metric tons, gross weight)

	Beginning			Ending
Month	stocks	Production	Shipments	stocks
1996:				
JanAug.	XX	103,000	104,000	XX
August	3,280	12,300	12,600	3,000
September	3,000	12,500	12,200	3,260
October	3,260	13,500	13,500	3,200
November	3,200	13,500	13,500	3,180
December	3,180	13,800	13,500	3,480
Total	XX	156,000	160,000	XX
1997:				
January	3,480	13,000	13,300	3,190
February	3,190	12,200	12,000	3,380
March	3,380	13,400	12,700	4,120
April	4,120	13,600	13,600	4,040
May	4,040	14,100	14,200	3,920
June	3,920	14,500	13,800	4,700
July	4,700	14,500	14,500	4,750
August	4,750	14,400	14,700	4,500
JanAug.	XX	110,000	109,000	XX

XX Not applicable.

 $^{1/\,\}mbox{Data}$ are rounded to three significant digits; may not add to totals shown.

^{2/} Includes stocks held at locations other than smelters.

^{1/} Excludes impure zinc oxide produced from other processes.

^{2/} Data are rounded to three significant digits; may not add to totals shown.

${\it TABLE~4}\\ {\it ESTIMATED~DISTRIBUTION~1/~OF~ZINC~OXIDE~SHIPMENTS~BY~INDUSTRY~2/~3/}}$

(Metric tons, gross weight)

		1996		1997			
Industry	August r/	JanAug. r/	JanDec.	June	July	August	JanAug.
Agriculture	W	W	W	W	W	W	W
Ceramics	475	4,290	6,180	529	574	603	3,910
Chemicals	2,370	21,800	32,700	2,910	3,330	3,360	23,600
Paints	491	4,630	6,790	652	802	750	5,020
Photocopying	W	W	W	W	W	W	W
Rubber	8,790	72,300	108,000	9,100	9,210	9,400	71,900
Other	422	4,260	6,260	561	562	558	4,290
Total	12,600	107,000	160,000	13,800	14,500	14,700	109,000

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other."

 ${\tt TABLE~5}$ APPARENT CONSUMPTION OF REFINED ZINC ACCORDING TO INDUSTRY USE AND PRODUCT 1/

(Metric tons)

		1996		1997			
Industry and product	August r/	JanAug. r/	JanDec.	June	July r/	August	JanAug.
Galvanizing:							
Sheet and strip	38,600	310,800	494,200	42,200	47,900	43,500	370,300
Other	11,700	96,500	160,200	14,800	17,700	15,000	129,100
Total	50,200	407,300	654,400	57,000	65,500	58,500	499,400
Brass and bronze	12,400	97,400	155,400	14,100	15,500	14,100	120,300
Zinc-base alloy	16,600	133,200	229,400	19,200	21,900	16,300	158,400
Other uses 2/	13,800	123,000	172,800	15,600	16,100	15,800	117,300
Total	93,000	761,000	1,212,000	105,800	119,000	104,500	895,400

r/ Revised.

TABLE 6
AVERAGE MONTHLY ZINC PRICES

	North American		
	Special High Grade,	LME cas	h
Month	¢/lb	¢/lb	\$/mt
1996:			
August	51.26	45.67	1,007.24
September	51.39	45.37	1,000.64
October	51.52	45.50	1,003.46
November	53.31	47.47	1,046.83
December	52.77	47.00	1,036.26
Year average	51.11	46.50	1,025.03
1997:			
January	55.17	49.28	1,086.52
February	59.26	53.50	1,179.38
March	62.69	56.92	1,254.80
April	61.97	56.26	1,240.40
May	64.94	59.44	1,310.51
June	66.12	61.42	1,354.18
July	73.25	68.85	1,517.96
August	79.15	75.00	1,653.51

Source: Platt's Metals Week.

 $^{1/\,}Distribution\ of\ U.S.\ producers\ only.\ Imports\ excluded\ because\ distribution\ by\ industry\ cannot\ be\ distinguished.$

^{2/} May include in-house consumption.

^{3/} Data are rounded to three significant digits; may not add to totals shown.

^{1/} Data are rounded to three significant digits; may not add to totals shown.

^{2/} Includes zinc used in making zinc dust, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, rolled zinc, and miscellaneous uses not elsewhere specified.

TABLE 7 U.S. EXPORTS OF ZINC 1/

			1997				
	199	16	Ju	July		date	
	Quantity	Value	Quantity	Value	Quantity	Value	
Material	(metric tons)	(thousands)	(metric tons)	(thousands)	(metric tons)	(thousands)	
Refined (slab) zinc	1,970	\$2,350	178	\$223	1,650	\$2,170	
Ore and concentrate (zinc content)	425,000	190,000	152,000	116,000	233,000	151,000	
Waste and scrap (gross weight)	45,500	30,300	4,080	2,890	30,800	20,800	
Powders, flakes, and dust (zinc content)	11,100	21,400	879	1,550	5,370	10,000	
Oxide (gross weight)	5,770	9,430	635	946	3,200	5,660	
Chloride (gross weight)	1,470	1,230	88	96	1,470	1,060	
Sulfate (gross weight)	5,230	2,970	403	260	3,430	1,900	
Compounds, other (gross weight)	1,250	4,670	26	129	149	567	

NA Not available.

Source: Bureau of the Census.

TABLE 8 U.S. IMPORTS FOR CONSUMPTION OF ZINC 1/

			1997				
	199	16	Ju	July		date 2/	
	Quantity	Value	Quantity	Value	Quantity	Value	
Material	(metric tons)	(thousands)	(metric tons)	(thousands)	(metric tons)	(thousands)	
Refined (slab) zinc	827,000	\$882,000	85,400	\$127,000	533,000	\$666,000	
Ore and concentrate (zinc content)	15,100	6,380			18,100	8,680	
Waste and scrap (gross weight)	31,900	12,800	2,900	1,610	18,100	7,830	
Powders, flakes, and dust (zinc content)	10,300	17,600	1,100	2,370	5,790	11,200	
Oxide (gross weight)	56,300	57,500	4,980	6,120	36,800	41,000	
Chloride (gross weight)	2,420	2,140	134	114	1,290	847	
Sulfate (gross weight)	4,050	2,840	535	277	3,350	1,870	
Compounds, other (gross weight)	1,190	1,280	154	171	936	1,130	

Source: Bureau of the Census.

 $^{1/\,\}mbox{Data}$ are rounded to three significant digits.

^{1/} Data are rounded to three significant digits.
2/ Data for the current month were not available at time of publication.

TABLE 9 SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE STOCKPILE $1 \slash$

(Metric tons)

	Beginning	Ending	
Month	inventory	Shipments	inventory
1996:	_		
August	268,000	1,460	266,000
September	266,000	2,550	264,000
October	264,000	1,630	262,000
November	262,000	2,810	259,000
December	259,000	2,110	257,000
Total	XX	16,500	XX
1997:			
January	257,000	3,020	254,000
February	254,000	4,400	250,000
March	250,000	5,080	245,000
April	245,000	13,400	231,000
May	231,000	7,600	224,000
June	224,000	1,850	222,000
July	222,000	51	222,000
August	222,000	665	221,000
Year to date	XX	36,000	XX

XX Not applicable.

Source: Defense Logistics Agency.

 $\label{thm:table 10} \text{U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY } 1/$

(Metric tons)

	Ge	neral imports		Imports for consumption		
		199	7 2/	•	199	7 2/
Material and country	1996	July	Year to date	1996	July	Year to date
Ore and concentrate (zinc content):						
Australia			9,930			9,930
Mexico	7,000		5,300	6,970		5,300
Peru	10,000	34	3,450	8,080		2,920
Other	322	53	203	91		
Total	17,300	87	18,900	15,100		18,100
Blocks, pigs, or slab:						
Brazil	32,000	2,200	17,100	32,000	2,200	17,100
Canada	503,000	40,300	274,000	503,000	40,300	274,000
Finland	18,300	2,010	13,000	18,300	2,010	13,000
Mexico	93,900	9,700	41,600	93,900	9,700	41,600
Peru	23,800	1,500	9,370	23,800	1,500	9,370
Russia	24,100	6,180	18,800	24,100	6,180	18,800
Spain	83,200	5,700	67,500	91,400	5,700	77,600
Sweden			12,500		3,020	3,020
Other	40,500	14,800	79,000	40,900	14,800	79,000
Total	819,000	82,400	533,000	827,000	85,400	533,000
Dross, ashes, & fume (content)	15,800	1,500	9,460	15,800	1,500	9,460
Grand total	852,000	84,000	561,000	858,000	86,900	561,000
Oxide (gross weight):						
Canada	28,600	2,270	18,600	28,600	2,270	18,600
China	2,070	128	2,180	2,070	128	2,180
Mexico	21,400	1,940	12,100	21,400	1,940	12,100
Other	4,420	648	3,880	4,310	648	3,880
Total	56,400	4,980	36,800	56,300	4,980	36,800
Other (gross weight):						
Waste and scrap	31,900	2,900	18,100	31,900	2,900	18,100
Sheets	16,900	1,520	15,300	16,900	1,520	15,300
Dust, powder, flakes	10,300	1,100	5,790	10,300	1,100	5,790

 $^{1/\,\}mbox{Data}$ are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

^{1/} Data are rounded to three significant digits; may not add to totals shown.

^{2/} Data for the current month were not available at time of publication.